1. (Amended) [Method] A method of modifying the geometric orientation of a digital image [(1)] in an image acquisition apparatus [(20)] adapted to acquire an image [(1)] in one amongst several different orientations and to store said image in the form of a compressed file, characterised in that it comprises the following steps:

[-] acquiring [(E1)] an image [(1)] in a chosen orientation;

[-] identifying [(E2)] said chosen orientation;

[-] converting [(E3)] said image into a digital image;

[-] spectral [transformation (E10) of] transforming said digital image;

[-] determining [(E12-E15)] a geometric transformation to be applied to said image acquired as a function of the chosen orientation;

[-] applying [(E16-E18)] the geometric transformation determined to symbols associated with spectral coefficients issuing from said spectral [transformation] transforming;

[-] recording [(E20)] in the compressed file two indicators [(1h, 1v)] representing a normal or reversed

order of the symbols respectively in two directions of the

digital image [(1)]; and

[-] coding [(E21)] the digital image in said

compressed file.

2.   (Amended) [Geometric] <u>The geometric</u>

orientation modification method according to Claim 1,

characterised in that it includes a step [(E11)] of

quantizing the spectral coefficients before the step [(E16-

E18)] of applying the geometric transformation, said symbols

being quantization symbols.

3.   (Amended) [Geometric] <u>The geometric</u>

orientation modification method according to [one of Claims 1

or 2] <u>Claim 1</u>, characterised in that said spectral

[transformation] <u>transforming</u> is a multiresolution

decomposition, such as a wavelet spectral decomposition.

4.   (Amended) [Geometric] <u>The geometric</u>

orientation modification method according to [one of Claims 1

to 3] <u>Claim 1</u>, characterised in that the step [(E12-E15)] of

identifying the chosen orientation is implemented by an

automatic orientation detector [(27)] incorporated in said

image acquisition apparatus [(20)].

    5.   (Amended) [Geometric] <u>The geometric</u>

orientation modification method according to [one of Claims 1

to 3] <u>Claim 1</u>, characterised in that the step [(E12-E-15)] of

identifying the chosen orientation is implemented by a manual

orientation selector [(28)] incorporated in said image

acquisition apparatus [(20)].

    6.   (Amended) [Geometric] <u>The geometric</u>

orientation modification method according to [one of Claims 1

to 5] <u>Claim 1</u>, characterised in that the image acquisition

orientation is chose from amongst a rotation through 90

degrees, a rotation through 180 degrees or a rotation through

270 degrees.

    7.   (Amended) [Geometric] <u>The geometric</u>

orientation modification method according to [one of Claims 1

to 6] <u>Claim 1</u>, characterised in that said spectral

transformation is a multiresolution spectral decomposition,

such as a wavelet spectral decomposition, and in that it also

comprises a step of transposition [(E19)] of a frequency sub-

band [(HL_1, HL_2, HL_3)] having coefficients of low frequency in

a first direction of the digital image and of high frequency

in a second direction of the digital image with a frequency

sub-band [(LH_1, LH_2, LH_3)] of the same resolution level in the

spectral decomposition, having coefficients of high frequency

in said first direction and of low frequency in said second

direction when the geometric transformation comprises a

rotation through 90 degrees or 270 degrees.

8.   (Amended) [Geometric] The geometric orientation

modification method according to [one of Claims 1 to 7] Claim

1, characterised in that it also comprises a step of

transposition [(E19)] of the values of the height and width

of the image when the geometric transformation applied

comprises a rotation through 90 degrees or 270 degrees.

9.   (Amended) [Device] A device for modifying the

geometric orientation of a digital image [(1)] incorporated

in an image acquisition apparatus [(20)] adapted to acquire

an image in accordance with one amongst several different

orientations and to store said image in the form of a

compressed file, having:

[-] means [of] _for_ acquiring [(21,22)] an

image [(1)] in a chosen orientation;

[-] means [of] _for_ identifying [(27, 28)] said

chosen orientation;

[-] means [of] _for_ converting [(23)] said

image into a digital image;

[-] means [of] _for_ spectral transformation

[(24, 29, 30)] of said digital image;

[-] means [of] _for_ determining [(24, 29, 30)]

a geometric transformation to be applied to said image

acquired as a function of the chose orientation;

[-] means [of] _for_ applying [(24, 29, 30)] the

geometric transformation determined to symbols associated

with spectral coefficients issuing from said spectral

transformation;

[-] means [of] _for_ recording [(24, 29, 30)] in

the compressed file two indicators [(1h, 1v)] representing a

normal or reversed order of the symbol respectively in two

directions of the digital image [(1)]; and

[-] means [of] _for_ coding [24, 29, 30)] the

digital image [(1)] in said compressed file.

10. (Amended) [Geometric] The geometric

orientation modification device according to Claim 9,

characterised in that it has means [(24, 29, 30) of] for

quantizing the spectral coefficients adapted to quantize said

spectral coefficients before application of the geometric

transformation, said symbols being quantization symbols.

11. (Amended) [Geometric] The geometric

orientation modification device according to [one of Claims 9

or 10] Claim 9, characterised in that said spectral

transformation is a multiresolution spectral decomposition,

such as a wavelet spectral decomposition.

12. (Amended) [Geometric] The geometric

orientation modification device according to [one of Claims 9

to 11] Claim 9, characterised in that the means [of] for

identifying the chosen orientation comprise an automatic

orientation detector [(27)] incorporated in said image

acquisition apparatus [(20)].

13. (Amended) [Geometric] The geometric

orientation modification device according to [one of Claims 9

to 12] Claim 9, characterised in that the means [of] for

identifying the chosen orientation comprise a manual

orientation selector [(28)] incorporated in said image

acquisition apparatus [(20)].

14.   (Amended) [Geometric] The geometric

orientation modification device according to [one of Claims 9

to 13] Claim 9, characterised in that the image acquisition

orientation is chose from amongst a rotation through 90

degrees, a rotation through 180 degrees or a rotation through

270 degrees.

15. (Amended) [Geometric] The geometric orientation

modification device according to [one of Claims 9 to 14]

Claim 9, characterised in that said spectral transformation

is a multiresolution spectral decomposition, such as a

wavelet spectral decomposition, and in that it also comprises

means [of] for transposition [(24, 29, 30)] of a frequency

sub-band [(HL_1, HL_2, HL_3)] having coefficients of low

frequency in a first direction of the digital image and of

high frequency in a second direction of the digital image

with a frequency sub-band [(LH_1, LH_2, LH_3)] of the same

resolution level in the spectral decomposition, having

coefficients of high frequency in said first direction and of

- 8 -

low frequency in said second direction when the geometric

transformation comprises a rotation through 90 degrees or 270

degrees.

16.   (Amended) [Geometric] The geometric

orientation modification device according to [one of Claims 9

to 15] Claim 9, characterised in that it also has means [(24,

29, 30) of] for transposing the values of the height and

width of the image when the geometric transformation applied

comprises a rotation through 90 degrees or 270 degrees.

17.   (Amended) [Geometric] The geometric

orientation modification device according to [one of Claims 9

to 16] Claim 9, characterised in that the means for the

spectral transformation of said digital image, the means [of]

for determining a geometric transformation, the means [of]

for applying the geometric transformation, the means [of] for

entering indicators [(1h, 1v])] in the compressed file, the

coding means, and if applicable the quantization and

transposition means, are incorporated in:

[-] a microprocessor [(24)],

[-] a read only memory [(29)] containing a

program for modifying the geometric orientation of a digital

image [(1)], and

[-] a random access memory [(30)] containing

registers adapted to record variables during the running of

said program.

18. (Amended) An image processing method,

comprising the steps of;

[-] generating image data representing an

image;

[-] wavelet-transforming the image data;

[-] quantizing the transformed data; and

[-] entropically encoding the quantized data,

characterized in that said method further comprises the steps

of:

[-] identifying a correct orientation of the

image represented by the image data, and

[-] applying a geometric transformation to the

transformed data in accordance with the result of the

identification.

22. (Amended) An image processing apparatus,

comprising:

[-] means [of] <u>for</u> generating an image data

representing an image;

[-] means [of] <u>for</u> wavelet-transforming the

image data;

[-] means [of] <u>for</u> quantizing the transformed

data; and

[-] means [of] <u>for</u> entropically encoding the

quantized data, characterized in that said apparatus further

comprises:

[-] means [of] <u>for</u> identifying a correct

orientation of the image represented by the image data; and

[-] means [of] <u>for</u> applying a geometric

transformation to said transformed data in accordance with

the result of the identification.

26. (Amended) [Image] <u>An image</u> acquisition

apparatus, characterised in that it has a geometric

orientation modification device according to [one of Claims 9

to 17] <u>Claim 9</u>.

- 11 -

27.   (Amended) [Digital] A digital photographic apparatus, characterised in that it has a geometric orientation modification device according to [one of Claims 9 to 17] Claim 9.

28.   (Amended) [Digital] A digital camera adapted to function in a still image mode, characterised in that it has a geometric orientation modification device according to [one of Claims 9 to 17] Claim 9.

29.   (Amended) [Storage] A storage means, readable by a microprocessor, characterized in that it is adapted to implement the geometric orientation modification method according to [one of Claims 1 to 8] Claim 1.

30.   (Amended) [Storage] A storage means, readable by a microprocessor, characterized in that it is adapted to implement the image processing method according to [one of Claims 18 to 21] Claim 18.

31.   (Amended) [Computer] A computer program product, loadable into a programmable processing apparatus, characterized in that it comprises software code portions